

## NOTES FROM RESRAD SITE

Family of codes: RESRAD-ONSITE, RESRAD-OFFSITE and RESRAD-BUILD

### RESRAD-BUILD

For assessing radiation exposures of a human receptor in a contaminated building or a building housing contaminated furniture or equipment

#### Objectives

RESRAD-BUILD is a computer code designed for analyzing radiation exposures resulting from occupying a building contaminated with radioactive materials or housing contaminated equipment or furniture, as well as from remediating the contamination.

#### Modeling Approach

Exposures analyzed for a receptor are considered to result from direct external radiation (from contamination sources and submersion in contaminated air), inhalation of airborne contaminated dust particles, inhalation of radon, and incidental ingestion of contaminated dust particles. The building under consideration can consist up to three rooms, with air exchange between the rooms and the outside environment. Up to 10 radiation sources and 10 receptors can be specified in a single calculation. Radiation sources and receptors can be located in any of the rooms, with specified coordinates and characteristics such as time fraction in the room, breathing, and incidental ingestion rate for the receptors and the orientation, shape, dimensions, and erosion rate for the contamination sources. The contamination sources can assume a point, line, plane, or volume geometry and can be on the surface or within the building, equipment, or furniture material. Radiation shielding between receptors and contamination sources can be specified and is factored into the external dose calculation. Users choose appropriate input parameter values to simulate a building occupancy (e.g., residential use and office worker) or remediation (e.g., decontamination worker and building renovation worker) scenario.

### RESRAD-OFFSITE

For assessing radiation exposures of a human receptor located on top of or at some distance from soils contaminated with radioactive materials

### RESRAD-ONSITE

For assessing radiation exposures of a human receptor located on top of soils contaminated with radioactive materials